

V. lancifolia, if specimens are to be trusted, and that is certainly the plant primarily intended by Smith. Continental authors do not show any such uniformity, for Smith's name has been applied to *V. pratensis* (*V. pumila*, Vill., not of Hook. and Arn., which is the true *V. canina*, Linn.), *V. stagnina*, and *V. lancifolia*.

III.—*A Catalogue of British Spiders, including remarks on their Structure, Functions, Economy and Systematic Arrangement.*
By JOHN BLACKWALL, F.L.S.

[Continued from vol. viii. p. 450.]

107. *Linyphia minuta*.

Linyphia minuta, Blackw. Lond. and Edinb. Phil. Mag. Third Series, vol. iii. p. 191; Research. in Zool. p. 384.

— *domestica*, Wider, Museum Senckenb. B. i. p. 265. taf. 18. fig. 1; Walck. Hist. Nat. des Insect. Apt. t. ii. p. 255.

The interior of buildings, shrubs trained against walls, crevices in the bark of old trees, and lichens growing upon their trunks and branches are the haunts frequented by this common spider, which is widely distributed in England and Wales. In September the female constructs several subglobose cocoons of white silk of a slight texture, the largest of which measures about $\frac{1}{2}$ th of an inch in diameter, and contains from 30 to 40 spherical eggs of a yellowish white colour. The cocoons are generally attached to objects situated near the snare.

108. *Linyphia cauta*.

Linyphia cauta, Blackw. Linn. Trans. vol. xviii. p. 655; Walck. Hist. Nat. des Insect. Apt. t. iv. p. 499.

Angles of walls, overhanging banks, and depressions in the trunks of large trees are the situations in which *Linyphia cauta* fabricates its extensive snare. Though rarely seen, in consequence of the habit of remaining in its retreat during the day, yet it is rather abundant in many parts of England and Wales.

The *Linyphia thoracica* of M. Wider (Museum Senckenbergianum, B. i. p. 261. taf. 17. fig. 10) appears to be nearly allied to this species, but as no description or figure is given of the male, I am unable to determine whether they are identical or not.

109. *Linyphia vivax*.

Linyphia vivax, Blackw. Linn. Trans. vol. xviii. p. 657; Walck. Hist. Nat. des Insect. Apt. t. iv. p. 499.

Both sexes of this spider, which bears a striking resemblance

to *Linyphia cauta*, were discovered in the greenhouse and melon-pits belonging to Mrs. Darbshire, of Green Heys, near Manchester, in September 1836.

In the account of *Linyphia vivax* given in the eighteenth volume of the 'Transactions of the Linnæan Society,' a doubt is implied as to its being distinct from the *Linyphia globosa* of M. Wider (Museum Senckenbergianum, B. i. p. 259. taf. 17. fig. 9); however, having attentively perused the description and inspected the figure of the latter, I am now thoroughly convinced that they are different species.

110. *Linyphia socialis*.

Linyphia socialis, Sund. Vet. Acad. Handl. 1832, p. 160.

— *annulipes*, Blackw. Lond. and Edinb. Phil. Mag. Third Series, vol. iii. p. 348; Research. in Zool. p. 398.

I concur entirely in the opinion communicated to me by Professor Sundevall (private letter), that *Linyphia socialis* and *Linyphia annulipes* are identical; the former name therefore, imposed upon this species by the Professor, must take precedence of the latter.

This spider, which occurs in autumn on the trunks of trees in woods at Oakland, M. Walckenaer has portrayed in his 'Hist. Nat. des Insect. Apt.' pl. 21. fig. F. 2 D, under the name of *Thérion gonflé*; but has prefixed to his description of it, t. ii. p. 274, the appellation of *Linyphia bucculenta*, conferred by Professor Sundevall on a very different species; namely on that designated *Linyphia reticulata* by M. Walckenaer (Vet. Acad. Handl. 1831, p. 109).

111. *Linyphia cripticolens*.

Linyphia cripticolens, Walck. Hist. Nat. des Insect. Apt. t. ii. p. 275.

— *nebulosa*, Sund. Vet. Acad. Handl. 1829, p. 218.

— *pallidula*, Blackw. Research. in Zool. p. 403.

When my attention was first directed to this spider in the summer of 1834, I perceived that it possessed the essential characters of a *Linyphia*, and described it in my 'Researches in Zoology' as new to science, under the specific name of *pallidula*, not being aware that M. Walckenaer had included it among the *Theridia*, in his 'Tableau des Aranéides,' p. 75, or that Professor Sundevall had described it previously, having, at that time, no opportunity of consulting his excellent publications in this department of zoology.

Linyphia cripticolens is found in North Wales under stones, and in cellars, vaults, and other obscure damp places. In June or July the female constructs a globular cocoon of yellowish brown silk of a loose texture, measuring $\frac{1}{6}$ th of an inch in dia-

meter; it is commonly attached to her spinners by fine lines, and contains about 98 spherical eggs of a brown colour, not adherent among themselves.

112. *Linyphia alticeps*.

Linyphia alticeps, Sund. Vet. Acad. Handl. 1832, p. 261.

— *luteola*, Blackw. Lond. and Edinb. Phil. Mag. Third Series, vol. iii. p. 192; Research. in Zool. p. 390.

The conclusion arrived at by Professor Sundevall, that *Linyphia alticeps* and *Linyphia luteola* are the same species, is perfectly correct (private letter); but M. Walckenaer is certainly mistaken in regarding it as identical with his *Argus cornutus* (Hist. Nat. des Insect. Apt. t. ii. p. 368), from which it differs remarkably in structure, colour, habits and œconomy.

I have procured specimens of this interesting *Linyphia* in Lancashire and Denbighshire, and Mr. R. H. Meade has taken it in Yorkshire. The male has the palpal organs fully developed in autumn, at which season both sexes are plentiful in the plantations about Crumpsall Hall, near Manchester, constructing snares of moderate extent among coarse grass beneath the trees. Like other species of the genus, they are usually seen on the under side of the horizontal sheet of web in an inverted position.

113. *Linyphia longidens*.

Linyphia longidens, Wider, Museum Senckenb. B. i. p. 270. taf. 18. fig. 5; Walck. Hist. Nat. des Insect. Apt. t. ii. p. 264.

— *tardipes*, Blackw. Lond. and Edinb. Phil. Mag. Third Series, vol. viii. p. 488.

On obtaining a copy of the first volume of the 'Museum Senckenbergianum,' I immediately perceived that *Linyphia longidens* and *Linyphia tardipes* are specifically the same. See the synonyma.

This spider is found in Denbighshire, Yorkshire, and Lancashire under stones and detached pieces of rock, and in December 1848 Mr. J. Hardy forwarded an adult female to me from Berwickshire. It pairs in August and September, and the female fabricates several cocoons of white silk of a fine but compact texture, which she attaches to the inferior surface of stones by a small web; they are flat on the side in contact with the stones, and convex, with a depressed margin, on the opposite side. The largest of these cocoons measures $\frac{1}{4}$ th of an inch in diameter and contains about 40 spherical eggs of a pale yellow colour, not agglutinated together, but enveloped in delicately soft silk. The snare of this species consists of a small, compact, horizontal sheet of web constructed in cavities beneath stones, on the under side of which it takes its station in an inverted position. In the dis-

position and relative size of its eyes an approximation to the *Theridia* may be traced.

114. *Linyphia frenata*.

Linyphia frenata, Wider, Museum Senckenb. B. i. p. 269. taf. 18. fig. 4; Walck. Hist. Nat. des Insect. Apt. t. ii. p. 279.

— *pallida*, Blackw. Linn. Trans. vol. xix. p. 126.

Theridium pallidum, Koch, Die Arachn. B. iii. p. 64. tab. 94. fig. 216.

Not perceiving that the *Theridium pallidum* of M. Koch is identical with the *Linyphia frenata* of M. Wider, M. Walckenaer has included it among the synonyma of *Theridion sisymphum* (Hist. Nat. des Insect. Apt. t. ii. p. 299).

In autumn this rare species spins among grass growing in the grounds about Oakland an extensive horizontal sheet of web supported by fine lines united to its superior surface and to each other at various angles, and attached by their upper extremities to objects situated above it. Like its congeners, it takes its station on the under side of the web in an inverted position, and there watches for its prey. Mr. R. H. Meade transmitted to me an adult male *Linyphia frenata* from Yorkshire in 1851.

115. *Linyphia tenuis*.

Linyphia pusilla, Blackw. Research. in Zool. p. 392.

I have been under the necessity of changing the specific name of this spider, the appellation of *pusilla* having been previously conferred on a small Swedish *Linyphia* by Professor Sundevall (Vet. Acad. Handl. 1829, p. 214).

Linyphia tenuis is of frequent occurrence among grass and under stones, and is widely distributed in England and Wales.

116. *Linyphia insignis*.

Linyphia insignis, Blackw. Linn. Trans. vol. xviii. p. 662; Walck. Hist. Nat. des Insect. Apt. t. iv. p. 499.

A single adult female of this species was sent to me from Lancashire in the autumn of 1837 by Mr. John Parry, who captured it at Trafford, near Manchester; and in 1851 two adult females and an immature male which had to undergo its final change of integument were submitted to my inspection by Mr. R. H. Meade, who informs me that he found them on the fronds of fern growing in woods near Bradford in Yorkshire.

117. *Linyphia nigella*.

Linyphia nigella, Blackw. Lond. and Edinb. Phil. Mag. Third Series, vol. viii. p. 487.

Specimens of *Linyphia nigella* were found under fragments of

rock in woods at Oakland, in September 1835; they were all males, and had the palpal organs completely developed.

118. *Linyphia pulchella*.

Linyphia pulchella, Blackw. Ann. and Mag. Nat. Hist. vol. xviii. p. 301.

An adult male of this *Linyphia* was discovered among grass in a pasture at Oakland in September 1845.

119. *Linyphia furva*.

Linyphia furva, Blackw. Linn. Trans. vol. xviii. p. 663.

In May 1838 both sexes of this spider were detected under stones in a moist pasture at Oakland.

120. *Linyphia Claytoniæ*.

Linyphia Claytoniæ, Blackw. Linn. Trans. vol. xviii. p. 664; Walck. Hist. Nat. des Insect. Apt. t. iv. p. 499.

I am indebted to Miss Ellen Clayton for the only specimens of this species which I have seen; they were two adult males, captured near Garstang in Lancashire.

121. *Linyphia obscura*.

Linyphia obscura, Blackw. Linn. Trans. vol. xviii. p. 665; Walck. Hist. Nat. des Insect. Apt. t. iv. p. 499.

Males of this spider, having the palpal organs fully developed, were taken in June 1836 on rails at Oakland.

122. *Linyphia gracilis*.

Linyphia gracilis, Blackw. Linn. Trans. vol. xviii. p. 666; Walck. Hist. Nat. des Insect. Apt. t. iv. p. 499.

Mature males of *Linyphia gracilis* were found on rails near Crumpsall Hall in November 1836.

Genus NERIËNE, Blackw.

123. *Neriëne marginata*.

Neriëne marginata, Blackw. Lond. and Edinb. Phil. Mag. Third Series, vol. iii. p. 188; Research. Zool. p. 363. pl. 3. fig. 6, 7.

This species constructs snares, similar in design to those of the *Linyphia*, among grass growing in and near woods in Lancashire and Denbighshire. I have also inspected specimens which were taken in Devonshire by Miss Ellen Clayton in 1845, and others captured in Yorkshire by Mr. R. H. Meade in 1851. The sexes arrive at maturity in autumn, and are sometimes abundant in localities suited to their habits. If this spider be com-

pared with *Linyphia marginata*, it will immediately be seen how easy the transition is from the genus *Linyphia* to that of *Neriëne*.

124. *Neriëne bicolor*.

Neriëne bicolor, Blackw. Lond. and Edinb. Phil. Mag. Third Series, vol. iii. p. 344; Research. in Zool. p. 366.

Neriëne bicolor is common in many parts of England and Wales. It appears to prefer well-wooded districts, constructing among grass a snare similar to that of *Neriëne marginata*. Not unfrequently it may be found on rails or concealed under stones partially imbedded in earth. The male has the palpal organs developed in autumn.

125. *Neriëne rufipes*.

Neriëne rufipes, Blackw. Lond. and Edinb. Phil. Mag. Third Series, vol. iii. p. 345; Research. in Zool. p. 368.

Specimens of this spider were obtained in 1832 under stones and on rails in the township of Crumpsall. In June the female fabricates several globular cocoons of yellowish white silk of a slight texture, which she attaches to the inferior surface of stones; the largest of them measures $\frac{1}{6}$ th of an inch in diameter, and contains about 50 spherical eggs of a yellowish white colour, not adherent among themselves.

126. *Neriëne livida*.

Neriëne livida, Blackw. Lond. and Edinb. Phil. Mag. Third Series, vol. viii. p. 486.

Mr. J. Hardy forwarded to me from Berwickshire, in December 1848, an adult male of this species, which is plentiful in the valley of the Conway, where it conceals itself under stones. In July the female spins several globular cocoons of white silk of a slight texture, attaching them to some depression in the stone selected for her retreat; the largest of these cocoons measures $\frac{1}{7}$ th of an inch in diameter, and comprises about 30 spherical eggs of a pale yellowish white colour, not agglutinated together.

127. *Neriëne furva*.

Neriëne furva, Blackw. Lond. and Edinb. Phil. Mag. Third Series, vol. viii. p. 486.

One adult male is the only specimen of this spider that I have seen; it was discovered under a fragment of rock in a wood at Oakland in June 1835.

128. *Neriëne errans*.

Neriëne errans, Blackw. Linn. Trans. vol. xviii. p. 643.

Argus errans, Walck. Hist. Nat. des Insect. Apt. t. iv. p. 511.

Neriëne errans is not uncommon among grass and on rails in North Wales and in the south of Lancashire.

129. *Neriëne sylvatica*.

Neriëne sylvatica, Blackw. Linn. Trans. vol. xviii. p. 644.

Adult males of this species were taken in February 1837 under detached pieces of rock, slightly imbedded in earth, in woods about Llanrwst.

130. *Neriëne viaria*.

Neriëne viaria, Blackw. Linn. Trans. vol. xviii. p. 645.

Argus viarius, Walck. Hist. Nat. des Insect. Apt. t. iv. p. 512.

A male of this spider, which had the palpal organs perfectly developed, was found running on a footpath at Oakland in May 1838.

131. *Neriëne pulla*.

Neriëne pulla, Blackw. Linn. Trans. vol. xviii. p. 646.

Argus pullus, Walck. Hist. Nat. des Insect. Apt. t. iv. p. 512.

Males of *Neriëne pulla*, in a state of maturity, were captured in June 1836 on rails near Llanrwst.

132. *Neriëne gracilis*.

Neriëne gracilis, Blackw. Linn. Trans. vol. xviii. p. 646.

Argus gracilis, Walck. Hist. Nat. des Insect. Apt. t. iv. p. 512.

Both sexes of this species were taken on rails at Crumpsall Hall, and at Capel Garmon, in the parish of Llanrwst, Denbighshire, in the autumn of 1836.

133. *Neriëne vagans*.

Neriëne vagans, Blackw. Research. in Zool. p. 374.

This is an aëronautic spider, and is very common among the grass of meadows and pastures in North Wales and in Lancashire.

134. *Neriëne pygmæa*.

Neriëne pygmæa, Blackw. Research. in Zool. p. 376.

Neriëne pygmæa is plentiful among the grass of old pastures in Lancashire and North Wales, and may frequently be seen running on rails and on footpaths.

135. *Neriëne lugubris*.

Neriëne lugubris, Blackw. Research. in Zool. p. 380.

In June 1834 I captured adult males of this species on iron rails at Crumpsall Hall.

136. *Neriëne saxatilis*.

Neriëne saxatilis, Blackw. Annals and Mag. of Nat. Hist. vol. xiii. p. 183.

A male of this *Neriëne*, having the palpal organs fully developed, was discovered among loose fragments of rock in a wood at Hendre House, near Llanrwst, in June 1841.

137. *Neriëne avida*.

Neriëne avida, Blackw. Annals and Mag. Nat. Hist. vol. xiii. p. 185.

Males and females of this spider were found on rails at Oakland in April 1839.

138. *Neriëne timida*.

Neriëne timida, Blackw. Annals and Mag. Nat. Hist. vol. xiii. p. 183.

Both sexes of this species were taken on rails at Oakland in April 1841.

139. *Neriëne flavipes*.

Neriëne flavipes, Blackw. Annals and Mag. of Nat. Hist. vol. xiii. p. 182.

In February 1841 adult males of *Neriëne flavipes* were captured on rails at Oakland.

140. *Neriëne parva*.

Neriëne parva, Blackw. Linn. Trans. vol. xviii. p. 647.

Argus minimus, Walck. Hist. Nat. des Insect. Apt. t. iv. p. 512.

Specimens of this very minute spider were detected on rails at Oakland in January 1837; they were all males, and had the palpal organs perfectly developed.

IV.—Upon the Development of Mollusks in Holothuriæ.

By Prof. MÜLLER*.

IN the Bay of Muggia, at Trieste, a *Holothuria* of the genus *Synapta* is very abundant. It was first discovered by Montague upon the English coast, and was by him called the *Holothuria digitata*, and so much of its anatomy as could be made out from specimens preserved in spirits has been set forth in the 'Anatomische Studien über die Echinodermen †.' In the living *Synapta digitata* I first discovered those suckers upon the tentacles, which Quatrefages had described in another *Synapta*, and some other anatomical peculiarities not observed by that writer,

* Read before the Royal Academy of Sciences of Berlin, Oct. 16, 1851.

† Müller's Archiv, 1850.